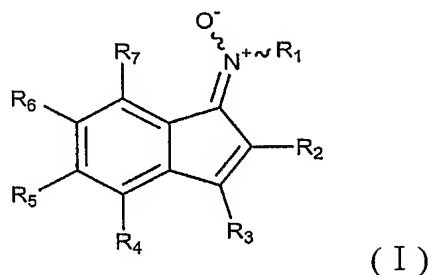


What is claimed is:

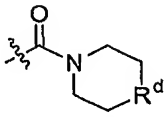
1. An indene derivative of formula (I) or a pharmaceutically acceptable salt thereof:



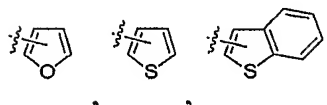
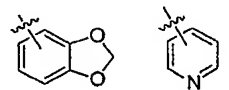
wherein,

R_1 is C_{1-6} alkyl, C_{1-6} alkenyl or C_{3-6} cycloalkyl, which is unsubstituted or substituted with one or more phenyl groups;

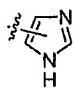
10

R_2 is H, CN, CO_2R^a , $CH_2CO_2R^a$, $CONR^bR^c$, , or phenyl;

R_3 is C_{1-6} alkyl, C_{3-6} cycloalkyl, or naphthyl, phenyl,



or



, which is unsubstituted or substituted with

one or more substituents selected from the group consisting of halogen, CN, NH_2 , NO_2 , OR^a , phenyloxy, C_{1-6} alkyl and C_{3-6} cycloalkyl; and

15

R_4 , R_5 , R_6 and R_7 are each independently H, OH, OSO_2CH_3 , $O(CH_2)_mR^e$, CH_2R^f , $OCOCH_2OR^g$, $OCH_2CH_2OR^g$ or $OCH_2CH=CHR^g$, or R_5 and R_6 together form OCH_2O ;

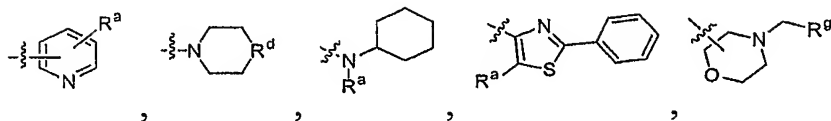
in which R^a is H, or C_{1-6} alkyl or C_{3-6} cycloalkyl, which is unsubstituted or substituted with one or more halogens;

20

R^b and R^c are each independently H, C_{1-6} alkyl or C_{3-6} cycloalkyl;

R^d is O, S or NR^a ;

R^e is H, halogen, C_{3-6} cycloalkyl, naphthyl,



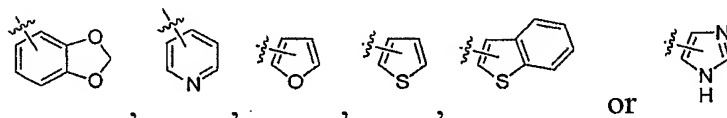
or phenyl, which is unsubstituted or substituted with one or more substituents selected from the group consisting of halogen, CN, NH_2 , NO_2 , OR^a , CF_3 and $COOR^a$;

R^f is $OCH_2CH_2R^g$ or ;

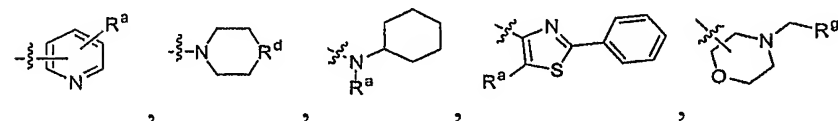
R^g is phenyl, which is unsubstituted or substituted with one or more substituents selected from the group consisting of halogen, CN, NH_2 , NO_2 and OR^a ; and

m is an integer in the range of 1 to 5.

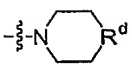
2. The compound of claim 1, wherein R_1 is C_{1-6} alkyl, which is unsubstituted or substituted with a phenyl group; R_2 is H, CN, CO_2R^a , $CH_2CO_2R^a$, $CONR^bR^c$ or phenyl; R_3 is C_{1-6} alkyl, C_{3-6} cycloalkyl, or phenyl,



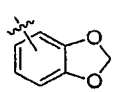



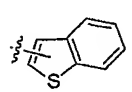
or , which is unsubstituted or substituted with one or more substituents selected from the group consisting of halogen, C_{1-6} alkyl and C_{3-6} cycloalkyl; R_4 and R_7 are H; R_5 and R_6 are each independently OH, OSO_2CH_3 , $O(CH_2)_mR^e$, CH_2R^f , $OCOCH_2OR^g$, $OCH_2CH_2OR^g$ or $OCH_2CH=CHR^g$, or together form OCH_2O ; R^a is H, or C_{1-6} alkyl; R^d is O or NCH_3 ; R^e is H, halogen, C_{3-6} cycloalkyl, naphthyl,

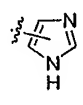


or phenyl, which is unsubstituted or substituted with one or more substituents selected from the group consisting of halogen, OH, methoxy, CF_3 and $COOR^a$; R^f is $OCH_2CH_2R^g$

or ; and R^b is phenyl.

3. The compound of claim 2, wherein R₁ is CH₃; R₂ is H, CN, CO₂R^a or

CONR^bR^c; R₃ is C₁₋₆ alkyl, or phenyl, , , , , .

5 or , which is unsubstituted or substituted with one or more halogens or C₁₋₆ alkyl groups; and R₅ and R₆ are each independently O(CH₂)_mR^e or CH₂R^f, or together form OCH₂O.

10 4. The compound of claim 1, which is selected from the group consisting of:

- 1) 6-methoxy-1-(*trans*-methylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 2) 1-(*trans*-isopropylimino-*N*-oxy)-6-methoxy-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 15 3) 1-(*trans*-benzylimino-*N*-oxy)-6-methoxy-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 4) 1-(*trans*-ethylimino-*N*-oxy)-6-methoxy-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 5) 6-methoxy-1-(*trans*-phenylpropylimino-*N*-oxy)-3-phenyl-1H-indene-2-
- 20 carboxylate ethyl ester
- 6) 6-methoxy-1-(*trans*-(2-methylbutenylimino)-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 7) 1-(*trans*-isobutylimino-*N*-oxy)-6-methoxy-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 25 8) 1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester

- 9) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 10) 1-(*trans*-methyylimino-*N*-oxy)-6-phenetyloxy-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 5 11) 3-furan-3-yl-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 12) 6-hydroxy-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 13) 1-(*cis*-methyylimino-*N*-oxy)-3-phenyl-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 10 14) 3-(*trans*-methyylimino-*N*-oxy)-1-phenyl-3H-indene-5-ol
- 15) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(5-phenylpentyloxy)-1H-indene-2-carboxylate ethyl ester
- 16) 1-(*cis*-methyylimino-*N*-oxy)-3-phenyl-6-(5-phenylpentyloxy)-1H-indene-2-carboxylate ethyl ester
- 15 17) 6-[2-(4-chlorophenoxy)acetoxyl]-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 18) 6-[2-(4-chlorophenoxy)ethoxyl]-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 20 19) 1-(*trans*-methyylimino-*N*-oxy)-6-(naphthalene-2-ylmethoxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 20) methyl-[3-phenyl-6-(3-phenylpropoxy)indene-1-ylidene]amine-*N*-oxide
- 21) 1-(*trans*-methyylimino-*N*-oxy)-6-[2-(5-methyl-2-phenylthiazol-4-yl)ethoxyl]-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 25 22) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 23) 6-[2-(4-hydroxyphenyl)ethoxyl]-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 24) 6-(2-adaman-1-ylethoxy)-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 30 25) 6-(2-cyclohexylethoxy)-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-

- 2-carboxylate ethyl ester
- 26) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(3-phenylpropenoxy)-1H-indene-2-carboxylate ethyl ester
- 27) 6-[2-(2-fluorophenyl)ethoxy]-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 5 28) 6-[2-(3-fluorophenyl)ethoxy]-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 29) 6-[2-(4-fluorophenyl)ethoxy]-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 10 30) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-[2-(3-trifluoromethylphenyl)ethoxy]-1H-indene-2-carboxylate ethyl ester
- 31) 6-(4-methoxycarbonylbenzyloxy)-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 32) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl amide
- 15 33) 1-(*trans*-methyylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 34) 6-[2-(cyclohexylmethylamino)ethoxy]-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 20 35) 3-(2-fluorophenyl)-6-methoxy-1-(*trans*-methyylimino-*N*-oxy)-1H-indene-2-carboxylate ethyl ester
- 36) 1-(*trans*-methyylimino-*N*-oxy)-6-[2-(4-methylpiperazine-1-yl)ethoxy]-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 37) (2,3-diphenyl indene-1-yl lidene)methylamine-*N*-oxide
- 25 38) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(3-phenylpropoxy)-1H-indene-2-carboxylate isopropyl amide
- 39) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(3-phenylpropoxy)-1H-indene-2-carboxylate cyclohexyl amide
- 40) [1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(3-phenylpropoxy)-1H-indene-2-yl]morpholine-4-yl-methanone
- 30 41) 1-(*trans*-methyylimino-*N*-oxy)-6-(2-morpholine-4-yl-ethoxy)-3-phenyl-1H-

indene-2-carboxylate cyclohexyl amide

42) 1-(*trans*-methylimino-*N*-oxy)-3-phenyl-5-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester

43) 1-(*trans*-methylimino-*N*-oxy)-6-phenethyloxymethyl-3-phenyl-1H-indene-2-carboxylate ethyl ester

44) (6-methoxy-3-phenylindene-1-ylidene)methylamine-*N*-oxide

45) 1-(*cis*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester

46) 6-(2-bromoethoxy)-1-(*trans*-methylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester

47) 1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate *tert*-buthyl ester

48) 1-(*trans*-methylimino-*N*-oxy)-5,6-methylenedioxy-1-oxo-3-phenyl-1H-indene-2-carboxylate ethyl ester

49) 4-[2-isopropylcarbamoyl-3-(*trans*-methylimino-*N*-oxy)-1-phenyl-3H-indene-5-yl-oxylmethyl]benzoate methyl ester

50) 1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate isopropyl amide

51) 1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate cyclopropyl amide

52) 3-(3-fluorophenyl)-1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-1H-indene-2-carboxylate isopropyl amide

53) (6-methoxy-1-(*trans*-methylimino-*N*-oxy)-3-phenyl-1H-indene-2-yl)acetate ethyl ester

54) (6-methoxy-1-(*cis*-methylimino-*N*-oxy)-3-phenyl-1H-indene-2-yl)acetate ethyl ester

55) 5-[2-(5-ethylpyridine-2-yl)ethoxy]-1-(*trans*-methylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate isopropyl amide

56) 1-(*trans*-methylimino-*N*-oxy)-6-(3-phenylpropoxy)-3-*p*-tolyl-1H-indene-2-carboxylate ethyl ester

57) 1-(*trans*-methylimino-*N*-oxy)-6-(3-phenylpropoxy)-3-thiophene-2-yl-1H-

- indene-2-carboxylate ethyl ester
- 58) 3-(4-chlorophenyl)-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 59) 3-(5-chlorothiophene-2-yl)-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 60) 1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-3-*m*-tolyl-1H-indene-2-carboxylate ethyl ester
- 61) 1-(*trans*-methyylimino-*N*-oxy)-3-(4-phenoxyphenyl)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 62) 3-benzo-[1,3]-dioxol-5-yl-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 63) methyl-[6-(3-phenylpropoxy)-3-pyridine-2-yl-indene-1-ylidene]-amine-*N*-oxide
- 64) 3-furan-2-yl-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 65) 3-ethyl-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 66) 3-methyl-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 67) 1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-3-thiophene-3-yl-1H-indene-2-carboxylate ethyl ester
- 68) 3-cyclopropyl-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 69) 1-(*trans*-methyylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-thiophene-3-yl-1H-indene-2-carboxylate ethyl ester
- 70) 3-benzo-[b]-thiophene-3-yl-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 71) 3-(1H-imidazole-4-yl)-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester
- 72) 3-(1-ethyl propyl)-1-(*trans*-methyylimino-*N*-oxy)-6-(3-phenylpropoxy)-1H-indene-2-carboxylate ethyl ester

- 73) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(3-phenylpropoxy)-1H-indene-2-carboxylate amide
- 74) 6-(4-benzylmorpholine-2-ylmethoxy)-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate isopropyl amide
- 5 75) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(3-phenylpropoxy)-1H-indene-2-carbonitrile
- 76) 1-(*trans*-methyylimino-*N*-oxy)-5,6-methylenedioxy-1-oxo-3-phenyl-1H-phenyl-2-carboxylate isopropyl amide
- 77) 1-(*trans*-methyylimino-*N*-oxy)-6-morpholine-4-ylmethyl-3-phenyl-1H-
10 indene-2-carboxylate ethyl ester
- 78) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(2-pyridine-2-ylethoxy)-1H-indene-2-carboxylate ethyl ester
- 79) 6-[2-(5-ethylpyridine-2-yl)ethoxy]-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 15 80) 1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-6-(2-pyridine-2-ylethoxy)-1H-indene-2-carboxylate isopropyl amide
- 81) 6-[2-(5-ethylpyridine-2-yl)ethoxy]-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate isopropyl amide
- 82) methyl-[6-(2-morpholine-4-ylethoxy)-3-phenylindene-1-ylidene]amine-*N*-
20 oxide
- 83) 5,6-bis-methanesulfonyloxy-1-(*trans*-methyylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 84) 1-(*trans*-methyylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate isobutyl ester
- 25 85) 1-(*trans*-methyylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate methyl ester
- 86) 1-(*cis*-methyylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate methyl ester
- 87) 1-(*trans*-methyylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-
30 indene-2-carboxylate propyl ester
- 88) 3-(4-fluorophenyl)-1-(*trans*-methyylimino-*N*-oxy)-6-(2-morpholine-4-

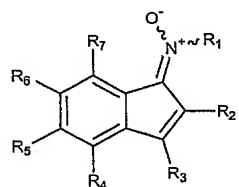
- ylethoxy)-1H-indene-2-carboxylate ethyl ester
- 89) 1-(*trans*-methylimino-*N*-oxy)-3-phenyl-6-(pyridine-2-ylmethoxy)-1H-indene-2-carboxylate ethyl ester
- 90) 1-(*trans*-methylimino-*N*-oxy)-3-phenyl-6-(pyridine-2-yloxy)-1H-indene-2-carboxylate ethyl ester
- 5 91) 6-(3-methoxybenzyloxy)-1-(*trans*-methylimino-*N*-oxy)-3-phenyl-1H-indene-2-carboxylate ethyl ester
- 92) 1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-thiophene-3-yl-1H-indene-2-carboxylate isopropyl amide
- 10 93) 3-(1-ethylpropyl)-1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-1H-indene-2-carboxylate ethyl ester
- 94) 3-benzo-[b]-thiophene-3-yl-1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-1H-indene-2-carboxylate isopropyl amide
- 95) 3-(4-fluorophenyl)-1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-1H-indene-2-carboxylate isopropyl amide
- 15 96) 3-(1-ethylpropyl)-1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-1H-indene-2-carboxylate isopropyl amide
- 97) 1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-(2,4,6-trimethylphenyl)-1H-indene-2-carboxylate ethyl ester
- 20 98) 3-(2,6-dimethylphenyl)-1-(*trans*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-1H-indene-2-carboxylate ethyl ester
- 99) 1-(*trans*-methylimino-*N*-oxy)-3-phenyl-5-(2-pyridine-2-ylethoxy)-1H-indene-2-carboxylate isopropyl amide
- 100) 1-(*trans*-methylimino-*N*-oxy)-5-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate isopropyl amide
- 25 101) 1-(*cis*-methylimino-*N*-oxy)-6-(2-morpholine-4-ylethoxy)-3-phenyl-1H-indene-2-carboxylate isopropyl ester
- 102) 3-(3-fluorophenyl)-1-(*trans*-methylimino-*N*-oxy)-6-(2-pyridine-2-ylethoxy)-1H-indene-2-carboxylate isopropyl amide
- 30 103) 6-[2-(5-ethylpyridine-2-yl)ethoxy]-3-(3-fluorophenyl)-1-(*trans*-methylimino-*N*-oxy)-1H-indene-2-carboxylate isopropyl amide

104) 3-(4-cyanophenyl)-6-(2-morpholine-4-ylethoxy)-1-(*trans*-methylimino-*N*-oxy)-1H-indene-2-carboxylate ethyl ester

105) 1-(*trans*-methylimino-*N*-oxy)-3-phenyl-6-(2-pyridine-2-ylethoxy)-1H-indene-2-carboxylate isopropyl ester.

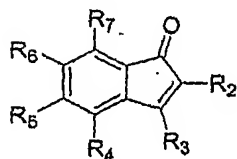
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5. A process for preparing the indene derivative of claim 1, which comprises step of subjecting indenone compound of formula (II) to a condensation reaction with $R_1\text{NHOH}$ or NH_2OH to obtain a compound of formula (III), and reacting the compound of formula (III) with $R_1\text{X}$:

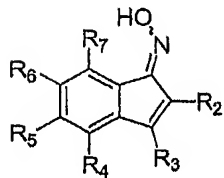


(I)

10



(II)



(III)

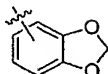

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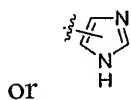
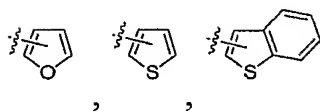
wherein,

X is halogen;

R_1 is C_{1-6} alkyl, C_{1-6} alkenyl or C_{3-6} cycloalkyl, which is unsubstituted or substituted with one or more phenyl groups;

R_2 is H, CN, CO_2R^a , $\text{CH}_2\text{CO}_2R^a$, CONR^bR^c , , or phenyl;

R_3 is C_{1-6} alkyl, C_{3-6} cycloalkyl, or naphthyl, phenyl, , ,



or which is unsubstituted or substituted with one or more substituents selected from the group consisting of halogen, CN, NH_2 , NO_2 , OR^a , phenyloxy, C_{1-6} alkyl and C_{3-6} cycloalkyl; and

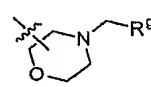
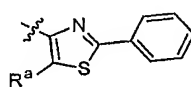
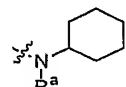
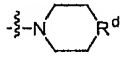
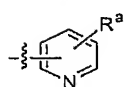
R_4 , R_5 , R_6 and R_7 are each independently H, OH, OSO_2CH_3 , $\text{O}(\text{CH}_2)_mR^e$, CH_2R^f , $\text{OCOCH}_2\text{OR}^g$, $\text{OCH}_2\text{CH}_2\text{OR}^g$ or $\text{OCH}_2\text{CH}=\text{CHR}^g$, or R_5 and R_6 together form OCH_2O ;

in which R^a is H, or C_{1-6} alkyl or C_{3-6} cycloalkyl, which is unsubstituted or substituted with one or more halogens;

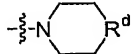
R^b and R^c are each independently H, C_{1-6} alkyl or C_{3-6} cycloalkyl;

R^d is O, S or NR^a ;

R^e is H, halogen, C_{3-6} cycloalkyl, naphthyl,



or phenyl, which is unsubstituted or substituted with one or more substituents selected from the group consisting of halogen, CN, NH_2 , NO_2 , OR^a , CF_3 and COOR^a ;

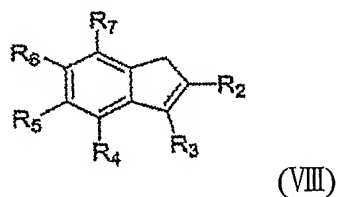
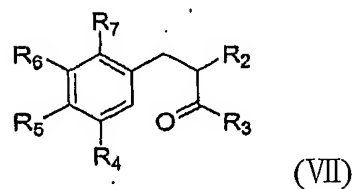
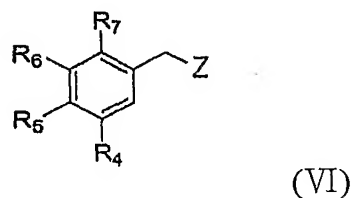
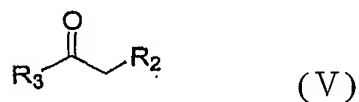
R^f is $\text{OCH}_2\text{CH}_2R^g$ or ;

R^g is phenyl, which is unsubstituted or substituted with one or more substituents selected from the group consisting of halogen, CN, NH_2 , NO_2 and OR^a ; and

m is an integer in the range of 1 to 5.

6. The process of claim 5, wherein the indenone compound of formula (II) is prepared by a process comprising the steps of:

- 1) reacting compounds of formula (V) and (VI) to obtain a compound of formula (VII);
- 2) subjecting the compound of formula (VII) to cyclization to obtain a compound of formula (VIII); and
- 3) subjecting the compound of formula (VIII) to oxidation.

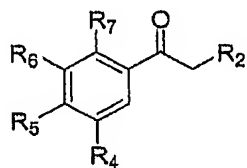


wherein,

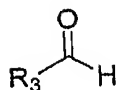
R₂ to R₇ have the same meanings as defined in claim 5, and Z is halogen or activated leaving group.

7. The process of claim 5, wherein the indenone compound of formula (II) is prepared by a process comprising the steps of:

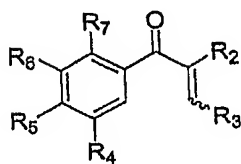
- 1) reacting compounds of formula (IX) and (X) to obtain a compound of formula (XI);
- 2) subjecting the compound of formula (XI) to cyclization to obtain a compound of formula (XII); and
- 3) subjecting the compound of formula (XII) to oxidation.



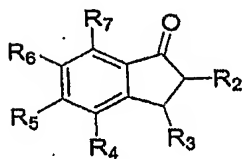
(IX)



(X)



(XI)



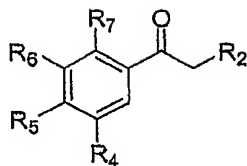
(XII)

wherein,

R_2 to R_7 have the same meanings as defined in claim 5.

8. The process of claim 5, wherein the indenone compound of formula (II) is prepared by a process comprising the steps of:

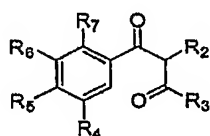
- 1) reacting compounds of formula (IX) and (XIII) to obtain a compound of formula (XIV); and
- 2) subjecting the compound of formula (XIV) to cyclization.



(IX)



(XIII)



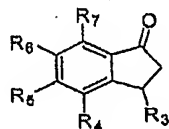
(XIV)

wherein,

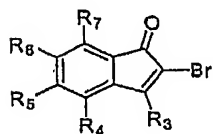
5 R_2 to R_7 have the same meanings as defined in claim 5.

9. The process of claim 5, wherein the indenone compound of formula (II) is prepared by a process comprising the steps of:

- 10 1) subjecting a compound of formula (XV) to bromination obtain a compound of formula (XVI); and
- 2) subjecting the compound of formula (XVI) to a carbon-carbon coupling reaction in the presence of a metal catalyst, or to a substitution reaction using a nucleophile.



(XV)



(XVI)

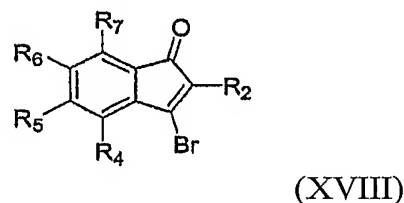
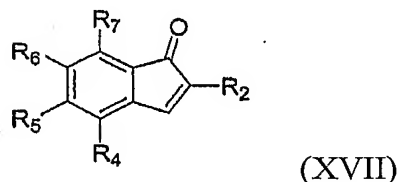
15

wherein,

R₃ to R₇ have the same meanings as defined in claim 5.

10. The process of claim 5, wherein the indenone compound of formula (II) is prepared by a process comprising the steps of:

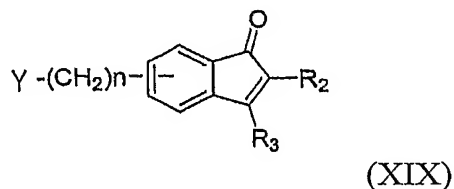
- 5 1) subjecting a compound of formula (XVII) to bromination obtain a compound of formula (XVIII); and
- 2) subjecting the compound of formula (XVIII) to a carbon-carbon coupling reaction in the presence of a metal catalyst, or to a substitution reaction using a nucleophile.



wherein,

R₂ and R₄ to R₇ have the same meanings as defined in claim 5.

15 11. The process of claim 5, wherein the indenone compound of formula (II) is prepared by subjecting a compound of formula (XIX) to an acylation reaction, a halogenation reaction followed by a substitution reaction by a nucleophile, or a carbon-carbon coupling reaction in the presence of a metal catalyst.



wherein,

R_2 and R_3 have the same meanings as defined in claim 5, Y is hydroxy, thiol, amino C_{1-6} alkyl or halogen, and n is an integer in the range of 0 to 5.

5 12. A pharmaceutical composition for modulating the activities of peroxisome proliferator activated receptors (PPARs) comprising a therapeutically effective amount of the compound or salt defined in claim 1 as an active ingredient together with a pharmaceutically acceptable carrier.

10 13. The composition of claim 12, which is used for the treatment and prevention of diabetes, obesity, arteriosclerosis, hyperlipidemia, hyperinsulinism, hypertension, osteoporosis, liver cirrhosis, asthma and cancer.